post-mortem an aneurysm was found at the lower part of the thoracic and upper part of the abdominal aorta.

COMMENTS BY MURCHISON. On January 1st the aneurysm ruptured and caused syncope. On August 4th the aneurysm burst in a downward direction and, the blood pressing forward, the liver and the peritoneum caused chronic peritonitis.

CASE VIII. (Dr. Rhodes, *London Medical Times and Gazette*, 1863, vol. ii. p. 10. "Rupture of an Aneurysm into the Left Pleural Cavity; Death Three Days after the Supposed Time of Rupture.") —T. W., aged thirty-nine years, decorator, was admitted into St. Mary's Hospital on February 11th, with supposed effusion into left lung. One week ago he became suddenly faint and fell down insensible, in which state he remained two minutes. On recovery he felt considerable pain on the left side. Was supposed to have received some injury to ribs. On examination the whole of left side was found dull on percussion, but absence of breath sounds and vocal vibration. No pulsation in cardiac region, but the apex beat could be felt in the epigastrium and the heart sounds to the right of the xiphoid. Death on the 14th.

Autopsy. Left pleura was filled with dark-colored serum. Heart displaced. Large clot of blood measuring four pints was effused over surface of the lung. On removing this a sacculated aneurysm about the size of a small orange was found at the posterior part of the thoracic aorta just at its termination, which communicated with the pleura by an opening about the size of a quill. No trace of pleurisy found.

If any one situation is more favorable than another for the spontaneous recovery after the rupture of an aneurysm of the aorta, the lung seems to enjoy that distinction, probably accounted for by the better facilities offered for the rapid formation of a clot with which the rupture is blocked. A number of cases are recorded where the patient lived a few hours or perhaps a day or two after the rupture of an aneurysm into the lungs, pleural cavity, or pericardial sac, but these cannot be placed under the heads of recoveries.

PRIMARY TUBERCULOSIS OF THE BREAST.*

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(From the William Pepper Laboratory of Clinical Medicine, Phoebe A. Hearst Foundation.)

WHEN the function of the breast is taken into account, one would expect mammary tuberculosis to be as frequent as genital tuberculosis. This is certainly not true. Among 300 gynecological cases

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Stratz[11] found 22 per cent. of tuberculosis; Martin had 10 in 287 cases, and Whitridge Williams reported that 8 per cent. of inflammatory adnexal disease was due to the tubercle bacillus.

Mammary tuberculosis is more rare. Bartsch[9] in 1901 could find but 65 undisputed cases in the literature. Probably 30 of these were primary. The primary form of genital tuberculosis has been open to doubt. Such pathologists as Klebs, Scanzoni,[11] Bollinger, von Recklinghausen, Schmorl, Ribbert, Aschoff and Albrecht[12] deny its existence in the adult. It is as difficult to prove the actual primarity of tuberculosis of the breast as it is of the genital organs. This does not apply to cases of direct inoculation, for well-attested instances of the latter are on record. Thus, Pluyette[1] reports primary tuberculosis of the breast in a girl aged twenty-three years, who was infected through a slight abrasion of the nipple, and Spinelli[13] speaks of a woman who developed the disease after intercourse with a male who suffered from tuberculosis of the testicle.

Whenever the infection is conveyed by means of the circulatory systems the question always arises whether, if autopsy were possible, the primary focus of the disease would not be found in the visceral organs more often affected by tuberculosis. Without an autopsy, therefore, a diagnosis of primary tuberculosis is not scientifically justified.

Primary genital tuberculosis does occur, however, and Veit,[illegible] after scrutinizing all of the available cases, accepts 15, 10 of the tubes and 5 of the uterus, as actual primary forms.

There are no cases of primary tuberculosis of the breast on record in which the diagnosis was made after autopsy. But as the primary form occurs in the genitalia, it is reasonable to suppose that it may develop in the breast. It is certain that tubercle bacilli may produce characteristic lesions remote from their point of ingress without affecting the parts through which they pass. Dobroklonski,[18] working under Cornil, and Ravenel[18] have produced experimentally primary tuberculosis of the lungs through the alimentary tract without any lesion of the tract itself. Attention has recently been directed to the tonsils as frequent portals of entry for the tubercle bacillus. That tubercle bacilli may be present in the tonsil without producing any anatomical alteration is evident from the work of Friedmann.[18]

Goodale and Hendelsohn[14] have observed that the tonsils possess marked absorptive powers. The crypts of the tonsils represent afferent lymph vessels, and carmine granules placed on the tonsils are rapidly absorbed and pass thence through the interfollicular tissue to the efferent lymphatics. As these facts might explain the occurrence of primary tuberculosis anywhere in the economy, we may accept, for clinical purposes at least, those cases of tuberculosis of the breast as primary in which there is no evidence of tuberculosis elsewhere, even after the most careful physical examination.

The importance of primary tuberculosis of the breast lies in the possibility of its transmission from the mother to the nursing child.

While it would be quite unusual, at least in the better classes, for a woman with any disease of the breast to suckle her infant, yet Coles[7] saw, in the out-patient department of the Philadelphia Polyclinic, two women with tuberculous breasts nursing tuberculous infants, and Davis[7] believes that he has made the same observation at the General Hospital in Vienna.

So far as I know there is but one case in which tuberculous infection of the child has been traced to its mother's milk. This case, reported by Roger and Garnier,[10] may be briefly summarized as follows:

A pregnant woman came under observation on February 16th, suffering with pharyngeal tuberculosis. On March 7th she gave birth to a child that weighed 2685 grams. The infant was nursed until March 12th, when, on account of the progressing illness of the mother, it was weaned. On March 24th the woman died, and at the autopsy tuberculosis of the lungs and other viscera was noted. The child gradually failed and died on April 25th from tuberculosis of the mesenteric glands, spleen, and kidneys. Two guinea-pigs were inoculated with the milk of the mother on March 11th. Both of these pigs died, one with tuberculosis, the other with fibrous peritonitis and enlarged lymph glands; no tubercle bacilli nor actual tubercles were found in the second case, but the lesions were evidently due to the tubercle bacillus.

While such an observation is exceptional in woman, it has been frequently made in the cow. Pearson[17] quotes many instances of infection arising directly from the milk of tuberculous cattle. Ernst found tubercle bacilli in the milk of 33 per cent. of cows in which a complete post-mortem showed that while the animals were widely tuberculous the udder was free; and Hirschberger, by the experimental inoculation of milk, produced tuberculosis in 55 per cent. of cases from tuberculous cows whose udders showed no sign of disease.

We may therefore believe that the milk of a tuberculous woman is always dangerous for the child, and that, although rare, tuberculosis of the breast may occur in a primary form and be unsuspected, and that the possibility of this condition ought always to be borne in mind during the period of lactation. If the breast is itself the seat of tuberculosis its milk must be highly infectious, for in the analogous affection of the cow the milk almost invariably contains tubercle bacilli.

There is some difficulty in reaching a satisfactory estimate of the frequency of primary tuberculosis of the breast. Freiburg[6] mentions 50 cases, Scudder[8] 80, Carrel 120. Bartsch[9] has thrown out of consideration all those in which a positive diagnosis was not made. Thus in all of his cases, either there was the histological picture of tuberculosis or the bacilli were found or inoculation experiments were positive. There were but 65 such cases, and this is the number

Bartsch includes in his series. So much for the existence of a tuberculous lesion.

When we attempt to separate the primary from the secondary forms there is difficulty also in determining which are primary. While it is unscientific to diagnose primary tuberculosis of any part without an autopsy, we may safely consider a given lesion primary if there is no evidence of tuberculosis elsewhere. If in a given case symptoms exist which may be attributed to tuberculosis in another part, then the disease of the breast cannot be regarded as primary, although the breast may have been its primary seat. This is the opinion of Piskacek,[16] and with it there are no grounds for disagreement.

Tuberculosis of the breast as a secondary lesion has no especial significance, whereas the fact that the mammary gland alone may be affected by the tubercle bacillus is of practical importance. It is well recognized, of course, that in the later stages other organs may be involved.

Reviewing Bartsch's series, in 35 there seems to have been tuberculosis elsewhere. All cases designated as being of a scrofulous habit and those in which there was coincident but less-marked tuberculous infection have been excluded. I have also excluded those cases where the affection was first noted in the axilla. Many of the tabulated cases are incompletely reported and details for determining the actual primarity of the case are scanty. At any rate, Bartsch has no more than 30 primary cases, and 2 of these are in the male. To these I have been able to add 12; some of the latter were not included by Bartsch in his list because suitable literature was not available. The impression one has in going over the reports of tuberculosis of the breast is that its primary form is extremely rare. Bull[21] in 1894 had had 185 amputations of the breast; all of these were submitted to histological examination, and in but one instance was tuberculosis found, and that was primary. Since that time Bull has not observed another case, although he has no record of the number of his breast amputations.

If we analyze the entire number of accepted cases in the female we find that of 40 patients, the entire number—

28 were married	70 per cent.
19 had borne children	47.5 "
12 were single	30 "
12 had hereditary taint	30 "
6 had history of trauma	15 "
8 suffered from mastitis during lactation	20 "
2 were directly inoculated	5 "

The youngest patient was sixteen, the oldest was fifty-nine years. From these figures it is difficult to draw many conclusions in regard to the predisposing causes of mammary tuberculosis. While most of the cases were found in married women, the age at which the disease occurs would explain this fact, because most women between the ages of twenty and forty are married. No case up to this time has been observed in the female before the age of puberty, although Demme reports a case in a male child four days old, due to direct inoculation. There seems to be no direct connection between lactation and the disease; but 47.5 per cent. of the women had borne children. Trauma has played an inconsiderable part. Perhaps the relative infrequency of mammary compared to genital tuberculosis is to be explained upon other grounds. Hegar, Martin, and Amann[11] have dwelt upon gonorrhœa as a predisposing factor in genital tuberculosis. Eisendrath[19] has recently made the same observation and believes that the gonococcus often prepares the soil for a later invasion of the tubercle bacillus. He quotes Casper,[20] who found 33 per cent. of 35 cases of tuberculous vesiculitis to have been preceded by gonorrhœa. Casper believes that an attack of gonorrhœa, especially in those predisposed to tuberculosis, acts like a trauma in aiding its development. It is similar to an injury in syphilis which is able to produce the manifestation of the disease at the injured spot.

PATHOLOGICAL ANATOMY. Tuberculosis of the breast occurs in either a (1) confluent or a (2) disseminated form.

The confluent form may be an instance of (*a*) mixed infection or of the (*b*) true tuberculous abscess.

The confluent abscess in the presence of mixed infection is the usual variety. It may involve the entire breast; it breaks down, forming fistulæ, and in the later stages produces retraction of the nipple. There are the usual signs of inflammatory processes in this region; the axillary glands may be secondarily involved.

An abscess purely the result of the tubercle bacillus, the so-called "cold abscess," is quite rare. It forms an elastic fluctuating tumor, mostly well circumscribed and sharply bordered. It is but seldom surrounded by infiltration; the skin remains unbroken and there are no fistulæ. The axillary glands are not involved.

In the disseminated form there are small nodes of the tuberculous disease scattered throughout the breast. There is not much general enlargement of the gland; the skin remains unaltered; the disease is slow in course, years passing, perhaps, without cognizance of the patient. This form is so rare that it is denied by some authors.

DIAGNOSIS. Many tumors of the breast and the inflammatory affections have to be distinguished from tuberculosis. The differential points here would be like those of tuberculosis in other parts and need not be repeated. In suspected cases the mammary secretion should be stained for tubercle bacilli, as was successfully done by Bevan,[7] or animal inoculation should be made. From simple pyogenic mastitis tuberculosis may be, as a rule, distinguished by its more chronic course. Carcinoma usually occurs later in life and is accompanied by retraction of the nipple. This does not often result in tuberculosis except after the formation of sinuses.

Reported by	Age and social state.	Hereditary history.	Previous disease.	No. of labors.	Last labor.	Lactation.	Breast affected.	Original seat of disease.	Trauma.	Treatment.	Duration of cure.	Remarks.	Axillary glands involved.	Upon what diagnosis is based.
Pluyette,	23 years; single.	......	....	......	......	....	....	Breast.	....	....	......	Direct inoculation.	....	Bacilli were found in the nipple.
Salomoni,	21 years; single.	......	Nodule in breast 2 years.	......	......	....	Right.	Breast.	....	Amputation of breast.	2 yrs.	....	Yes.	Bacilli.
Salomoni,	23 years; married.	......	....	......	......	....	Left.	Breast.	....	Amputation of breast.	4 yrs.	....	Yes.	Bacilli.
Warthin,	40 years; married.	......	....	5	11 mos. before.	Breast pained while nursing 3d child, 2 yrs. before last.	Right.	Breast.	....	Excision of nodes.	1 yr. ?	....	....	Bacilli; histological examination.
Warthin,	39 years; single.	Yes.	Blow on breast 5 yrs.bef're	......	......	....	....	Breast.	Yes.	Amputation of breast.	Not heard from.	....	Yes.	Histological examination.
Davis,	17 years; married.	......	....	......	Pregnant 7½ mos	....	Right.	Breast.	....	Amputation of breast.	1 yr	Allowed to go to term; baby died in 6 mos. of marasmus.	....	Bacilli.
Davis,	25 years; single.	......	....	.....	......	....	Left.	Breast.	....	Amputation of breast.	8 yrs.	....	....	Histological examination.
Powers,	40 years; married.	Yes.	Pain in rt. breast ten years before at 2d child.	6	......	Never nursed with right breast after second child.	Right.	Breast.	....	Excision of nodules.	8 yrs.	....	....	Histological examination.
Powers,	26 years; married.	.....	....	1	2½ yrs. before.	Had not used left breast for nursing; no reason given.	Left.	Breast.	....	Amputation of breast.	8 yrs.	Patient subsequently died of phthisis.	Yes.	Histological examination.
Ely,	35 years; married.	......	....	......	......	....	....	Breast.	....	Amputation of breast.	Not given.	Direct inoculation.	....	Histological examination and animal inoculation.
Schifone,	32 years; single.	......	....	......	......	....	Right.	Breast.	....	Amputation of breast.	Not given.	....	....	Histological examination and animal inoculation.
Anspach,	59 years; married.	......	....	8	17 years before.	....	Right.	Breast.	....	Amputation of breast.	1 yr.	....	....	Histological examination.

PROGNOSIS. As in genital tuberculosis, the disease in itself is favorable. The result depends upon the existence of visceral complications. Bartsch's data relative to the results of treatment in his series is too meagre to draw conclusions. In my own series of 12 cases, 2 were not heard from after operation; 4 are reported cured within a year; 1 died at the end of three years, and in 1 the after-condition of the patient is not noted. The duration of cure in the remaining cases is put down at 8, 4, 3, and 2 years.

TREATMENT. Although simple evacuation and curettage or extirpation of the diseased nodules alone has sufficed in some cases, the gravity of the disease usually demands amputation of the breast and the removal of enlarged axillary glands.

The details of the case I have added to those found in the literature are as follows:

HISTORY. Woman, aged fifty-nine years, the mother of three children; there is no tubercular history; there is no clue whatever to the probable source of infection. Husband and children are all living and well. Parents died of old age. Patient married at the age of twenty-eight; menopause at forty-eight; last child when forty-two years of age. She always used both breasts during lactation and never had pain in them. Never had any pulmonary disease nor any illness that might be construed as being tuberculous in nature. Three years before coming under observation a nodule appeared in the right breast; it increased slowly in size and caused retraction of the nipple. There was no ulceration. Pain occurred in the right arm.

Treatment. The breast was amputated by Dr. J. G. Clark, who saw the woman in consultation with Dr. James Tyson. I wish to thank these gentlemen for the privilege of reporting the case.

Pathological Report, Path. No. 607.

Macroscopic Description. The specimen consists of an amputated breast including a portion of the pectoral muscle, together with axillary fat and lymph glands. The skin surface is intact; the nipple is considerably retracted, and at this area and to the right of it there is an irregular nodule about the size of a walnut. The mass is not well circumscribed, but fuses with the surrounding tissue. Upon section the breast appears atrophic. Beneath the nipple and continuous with it there is an irregular mass made up of fibrous tissue. Here and there are dark spots which appear to be areas of necrosis. The entire glandular portion of the breast is represented by this nodule. Its fibres are continuous with the trabeculæ of the fatty tissue which makes up the bulk of the specimen.

Histological Description. The surface epithelium and that of the ducts appear normal. The glandular elements are quite atrophic and there is a relative increase of connective tissue. The lymph spaces throughout the specimen are crowded with small cells having round nuclei which occupy most of the cell body. Such collections are directly continuous with areas comprising giant cells surrounded by epithelioid cells and the small round ones above mentioned. The nuclei of the giant cells are at the periphery, and the picture is typical of tuberculosis. A few sections were stained for tubercle bacilli, but none were found. It is unfortunate that no animal inoculations were made, but as the case was clinically one of carcinoma the specimens had been hardened in formalin before the value of such proof was apparent.

Bibliography.

1. Pluyette. Tuberculose mammaire, Gaz. hebdom. de méd. et de chir., 1900, No. 103.
2. Salomoni. Tuberculosi della mammellæ, Clin. chir., Milano, 1901, vol. ix. pp. 169–178.
3. Michalow. Russk. arch. Patol. klin. med. i Bakteriol. St. Petersb., 1901, vol. xi. pp. 40–46.
4. Warthin. The American Journal of the Medical Sciences, July, 1899.
5. Powers. Annals of Surgery, August, 1894; and 1897, vol. xxv. p. 86.
6. Freiburg. Transactions Ohio Medical Society, Cleveland, 1898, pp. 177–184.
7. Davis, E. P. Medical News, Philadelphia, June 12, 1897.
8. Scudder. The American Journal of the Medical Sciences, 1898.
9. Bartsch. Inaugural Dissertation, Jena, 1901.
10. Roger and Garnier. Comptes-rendus, Soc. de biologie, March, 1900, Séance February 24th, vol. lii., No. 8.
11. Quoted by Hartz. Monat. f. Geb. u. Gyn., Bd. xvi., Heft 3.
12. Quoted by Amann. Zent. f. Gyn., 1902, No. 45.
13. Spinelli. Ibid.
14. Quoted by George B. Wood. University of Pennsylvania Medical Bulletin, December, 1903
15. Schifone. Incurabili, Napoli, 1901.
16. Piskacek. Medicinische Jahrbücher, Wien, 1887, p. 613.
17. Pearson. Bulletin No. 75, Department of Agriculture, State of Pennsylvania.
18. Ravenel. Proceedings of the Pathological Society of Philadelphia, May, 1902.
19. Eisendrath. Chicago Medical Record, December, 1903.
20. Casper. Deutsche med. Wochen., 1900, p. 662.
21. Bull. Personal communication.
22. Veit. American Gynecology, September, 1903.

A CASE OF MERALGIA PARÆSTHETICA.

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I wish to add the following case of meralgia paræsthetica to the number of those already reported:

Mrs. G., white, aged forty-three years, primipara, came under observation complaining of disability in the left thigh. Her father is living and well at the age of sixty-eight. Her mother died of heart disease at the age of fifty. She has one brother and one sister, both living. The former enjoys excellent health, the latter suffers from intercostal neuralgia. A maternal aunt died of cancer of the breast, and a paternal uncle of Bright's disease. Apart from measles and chicken-pox the patient enjoyed good health until the birth of her child nineteen years ago. The labor was difficult and the puerperium was complicated by abscess of the breast and a